

# imagery\_utils on the ASC

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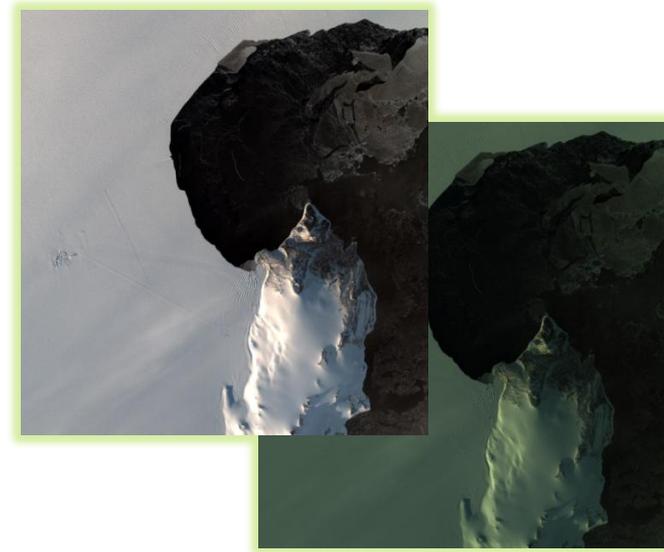
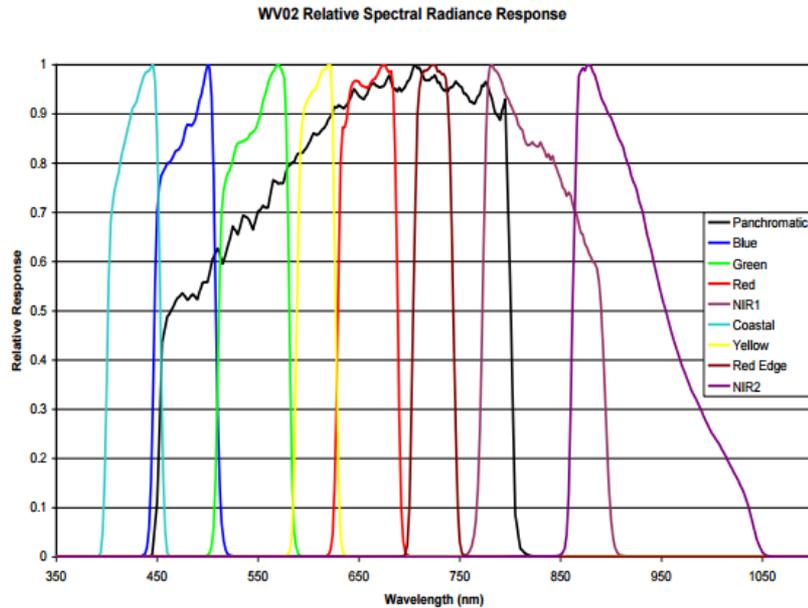
# Terrain correction



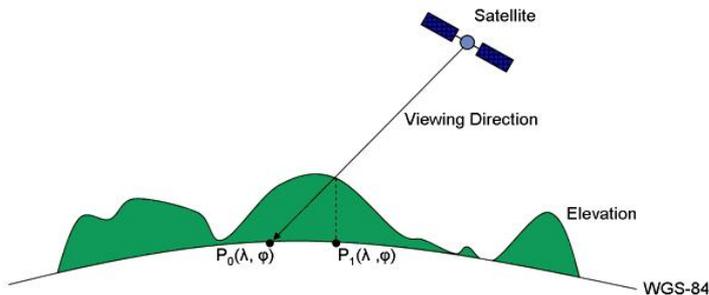
## Terrain correction



# Radiometric correction



$$L = GAIN * DN * \left( \frac{abscalfactor}{effectivebandwidth} \right) + OFFSET$$



$$\rho_{\lambda_{Pixel, Band}} = \frac{L_{\lambda_{Pixel, Band}} \cdot d_{ES}^2 \cdot \pi}{E_{sun_{\lambda_{Band}}} \cdot \cos(\theta_S)}$$

# Radiometric correction



# Radiometric correction profiles

- **Basic visual analysis over ice (-t Byte -c rf)**  
This profile is optimized to provide imagery for visual analysis over bright surfaces like ice and snow. It outputs a smaller 8-bit image instead of the full 11 bit radiometric range and balances the image colors.
- **Basic visual analysis over non-ice (-t Byte -c mr)**  
This profile is optimized to provide imagery for visual analysis over darker surfaces like rock and vegetation. It outputs a smaller 8-bit image instead of the full 11 bit radiometric range and balances the image colors, plus it brightens up the low end of the visual spectrum to provide good contrast in dark areas.
- **Terrain correction only (-t UInt16 -c ns)**  
For users who wish to use the scripts only for terrain correction, this set of parameters leaves the image DN values as is and only applies terrain correction according to the DEM you supply.
- **Top-of- atmosphere reflectance or radiance (-t Float32 -c rf or -c rd)**  
This set of parameters corrects the DN values to top-of- atmosphere reflectance (-c rf) or radiance (-c rd) and stores the result in a floating point raster. The resulting rasters take up a more space on your filesystem but are more useful for some quantitative analyses.